

Rec'd PCT/PTO 21 JUL 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/059249 A1

(51) International Patent Classification⁷: G01B 21/22

(21) International Application Number:
PCT/IB2002/005665

(22) International Filing Date:
30 December 2002 (30.12.2002)

(25) Filing Language: Italian

(26) Publication Language: English

(71) Applicants and

(72) Inventors: **SALSEDO, Fabio** [IT/IT]; Viale Umberto I, 100, I-04100 Latina (IT). **ULLRICH, Guenther, Nino,** Carlo [IT/IT]; Viale Trieste, 3, I-54100 Massa (IT). **BERGAMASCO, Massimo** [IT/IT]; V. Don Minzoni, 144, I-56011 Castelmaggiore - Calci (IT). **VILLELLA, Paolo** [IT/IT]; Via Gentileschi, 8, I-56123 Pisa (IT).

(74) Agent: **CELESTINO, Marco**; Viale Giovanni Pisano, 31, I-56123 Pisa (IT).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PI, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

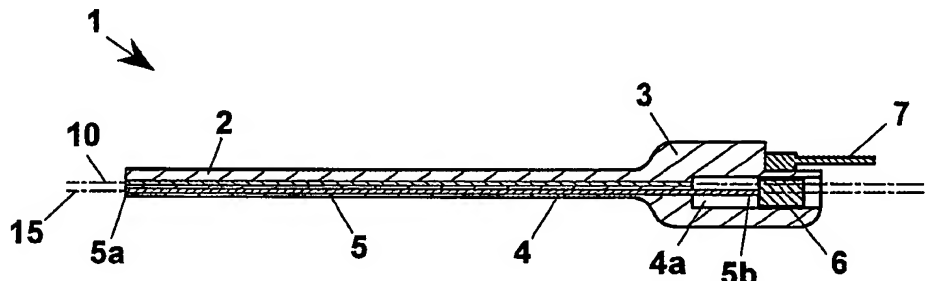
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GONIOMETRIC SENSOR



(57) Abstract: A goniometric sensor (1) for measuring the relative rotation of two objects (20, 25) comprising a flexible elongated element (2) whose respective ends are connected to the two objects (20, 25) and during whose bending the length variation ΔL is determined of one of the fibres (15) not located at the neutral axis (10). This length variation ΔL is directly proportional to the relative rotation (α) between the two bodies (20, 25) multiplied for the eccentricity (e) of the fibre (15) with respect to the neutral axis (10). Therefore, it is possible to determine easily the relative rotation (α) by knowing the length of rest L and the eccentricity (e) with respect to the neutral axis (10) and to measure the length variation ΔL of fibre (15), for example measuring the movement of an end of a cable located in a hole that contains fibre (15).